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French Agricultural Research Centre for International Development

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Biomass, Wood, Energy, Bioproducts research unit

DEVELOPMENT OF INNOVATIVE ALTERNATIVE CROPS FOR THE PRODUCTION OF NATURAL RUBBER

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"Imaging as a knowledge tool for guayule biomass: new insights into compartmentalization of metabolites of interest"

Guayule (*Parthenium argentatum*, Asteracea) is a rubber plant recently domesticated by humans who must benefit from innovative approaches to speed-up knowledge acquisition in order to fasten the mastery of its culture but also to optimize the biomass valorization processes. Imaging is an evolving discipline that today allows us to acquire knowledge about anatomy, histolochemistry or the localization of secondary metabolites. It allows to acquire a 3D vision of the biomass but also to understand cellular dynamics (*in vivo* imaging). In our talk, we will show how conventional histology, X-ray tomography and spectral analysis techniques in multiphitonic microscopy make it possible to have a good knowledge of the structure of guayule stems. We will also show how imaging approaches can allow to visualize and to understand the effect of the different steps of isoprene extraction and thus open new routes for the optimization of post-harvesting processings .

Subject: oral
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